Alumni News

Julius Kovacs

Occasionally we are pleasantly surprised by visits from former undergraduate and graduate students who are passing though East Lansing, but more often we receive email messages from alumni who want to let us know what is going on with their careers and their lives. A random selection of these bits of news appears below. If you'd like to share some information for the next newsletter we'd be happy to include it.

Cathy Mader PhD'93 was recently awarded tenure at Hope College. She is active with the CAPA program at Hope, maintaining the system for the College's users and recently participated in a CAPA workshop at MSU, describing how Hope's program works and is similar to or different from programs at other places (such as MSU). **Mary Lu Larsen** PhD'76 is still at Towson in Maryland and has recently made a change of research effort to particle astrophysics, in harmony with an emphasis change in the college. **David Musicant** BS'92 has returned to the University of Wisconsin, Madison to work on his PhD in Computer Science after receiving two MSs from UW (in Mathematics and Computer Scince) in 1994. He spent three years in the consulting industry before returning to UW. **Dennis Kuhl** PhD'96 has joined the faculty as an Assistant Professor in Physics at Bridgewater State College in Massachusetts after completing postdoctoral work in the Center for Science and Mathematics Teaching at Tufts University. **Shigeru Yokoyama** PhD'96 is a Lecturer in the Physics Department at the University of Michigan, after two years in medical physics in Houston. **Michael Fauerbach** PhD'97 informs us that he has completed a postdoctoral appointment at Florida State University and joined the physics faculty at the Mississippi School for Mathematics and Science, one of only four public residential high schools in the country. Only the best of 11th and 12th graders in the state of Mississippi are awarded scholarships to attend MSMS. **Bruce Wood** BS'86 and MS'89 is at Lockheed Martin in Palmdale, CA after several years on the east coast working with the project attempting to update the antiquated air traffic control system with one that will be more reliable. That project has been put on indefinite hold. **Raman Pfaff** PhD'96 is at the University of New Haven with a joint appointment in Physics and Education Departments. Teaching five courses keeps him busy. **Michael Narlock** MS'94 is currently the planetarium operations manager and staff astronomer at Cranbrook Institute of Science with an ad-

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Newsletter

MSU Physics and Astronomy Department

In and Around the Department

The 1999 entering class for our physics and astronomy graduate program was one of our strongest ever, with a total of 25 students joining our program at the beginning of Fall semester and 2 at the beginning of Spring semester. We had a nice mix of US and foreign students, with about 50% being in each catagory. One student was awarded a College of Natural Science fellowship, while two students received fellowships from the NSCL. We now have an active graduate recruiting committee and continue to look for ways to find and attract high quality physics and astronomy students.

Each year the Department of Physics and Astronomy honors excellence in faculty, staff, graduate and undergraduate students with various awards. Departmental Awards for academic year 1998-99: Thomas H. Osgood Undergraduate Award (for Outstanding Senior) to Michelle Stark; Bruce Ver West Award (for Outstanding Junior) to be shared by Timothy McCaskey, Adam Smith, and Jeroen Thompson; Favorite Graduate TA (vote of GTA Supervisors) to John Brecht; Sherwood K. Haynes Graduate Award (for Outstanding Graduate Student) to John Kruse; Best Graduate Teacher (vote of Graduate Students) to Mark Dykman; Outreach Award to Gary Westfall for his involvement in local school programs such as LEAP and Science Olympiad; Distinguished Staff Award to Janet King; Thomas H. Osgood Teaching (Non-Tenured) (for undergraduate teaching) to Scott Pratt; Thomas H. Osgood Teaching Award (Tenured) (for undergraduate teaching) to William Pratt; Thomas Kaplan Award (for Outstanding CMP "brown-bag" seminar) to be shared by Tatyana Barabash and Yen-Sheng Su.

Jazcek Braden, a Computer Assistant for the Department of Physics and Astronomy for over two years, has received honorable mention as Student Employee of the Year at Michigan State University.

David Tomanek has received an offer to visit Tokyo Institute of Technology as a visiting professor during the Spring semester of 2000, all expenses paid.

Diane Clark retired July 7 after 29 years of service in the Physics-Astronomy Library and 32 years total service to the MSU Libraries. In August, Virginia Boone joined the Department as the new Library Clerk. She comes to us with over ten years experience working in the Main Library.

Ed Kashy and Michael Thoennessen as well as their colleagues, Nancy Davis, Sherri Wolfe, and Isaac Tsai have been notified that they are the recipients of the 1999 Wickenden Award of the American Society of Engineering Education. This award recognizes the paper published in the Journal of Engineering Education each year that is most responsive to the goals and objectives embodied in the Editorial Board's Editorial Policy. Their paper, "Using Networked Tools to Promote Student Learning in Large Classes" was published October 1998 issue of that Journal.

Susan Simkin has accepted a two-year appointment at the NSF within the Division of Astrophysics as Program Director for Extragalactic Astronomy and Cosmology, effective 13 September 1999. She can be reached after September 13 at ssimkin@nsf.gov or by telephone at (703) 306-1827.

When Jerry Cowen passed away earlier this year he expressed the wish that there should be no conventional memorial function for him. His wife, Elaine, wished us to honor that request. Many in the department, and elsewhere, missed the opportunity to remember Jerry. Three people (Bhanu Mahanti, Tom Kaplan and Peter Schroeder) discussed the possibility of a conference to recognize Jerry's contributions to the teaching and research of Physics. Elaine accepted the idea provided it was "rooted in Physics", and in this way the Jerry Cowen Symposium was born. Invitations were sent out to as many of Jerry's old students and research colleagues that we could locate. (Our apologies to those we missed.) The response was so great that there was only five minutes for Dr. Repko of the present faculty to speak. The guest speakers were: Dr. Robert Spence, Jerry's Ph.D supervisor; Dr. Philip Wigen, Ohio State University, Jerry's first Ph.D student; Dr. Frederick Jeffers, Iomega, an undergraduate in Jerry's research laboratory in 1959(!); Dr. Mercouri Kanadzitas,

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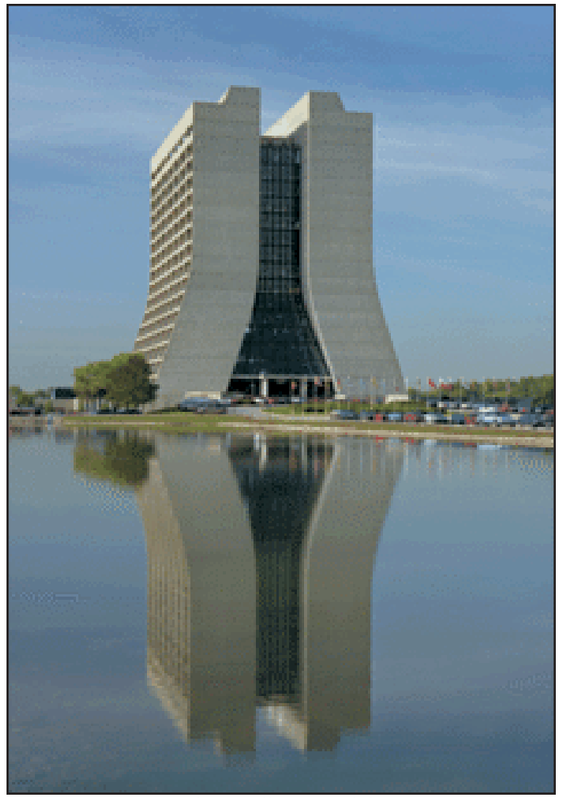


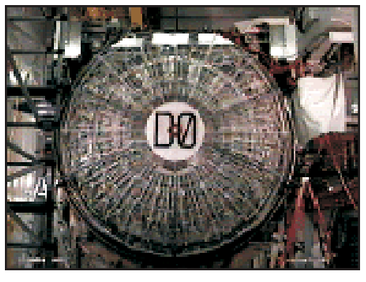
Wilson Hall at Fermilab

MSU at Fermilab

Bernard Pope

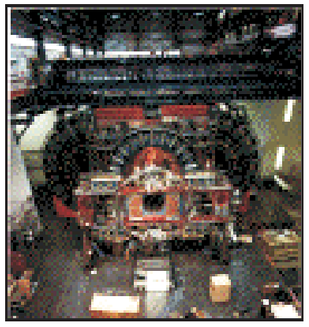
A striking feature of the research carried out by the experimental High Energy Physics group is that it is often based in locations away from the campus of Michigan State. A significant program of research over the past 15 years has been participating in the collider program at the Fermi National Accelerator Laboratory (Fermilab) in Batavia, Illinois – about 40 miles west of downtown Chicago.

The particles produced in these violent collisions are analyzed by two massive detectors, named CDF and DZero, located at interaction points separated by just over a mile around the circumference of the accelerator r ing. Each detector has been built and operated by a collaboration of about 500 physicists. MSU is almost unique in having significant participation in both of these collaborations and is, in fact, one of the lar gest university groups involved at Fermilab. Professor Joey Huston is the leader of quantum chromodynamics (QCD) studies in the CDF experimen t, while Professor Harry Weerts is a Spokesperson and Project Manager of the DZero collaboration.



The DZero Detector

After an extremely successful data-taking run from 1993-96, the Fermilab Tevatron collider and both detectors are presently being upgraded with a significant improvement in luminosity expected. Perhaps the most important physics result from the last Tevatron run has been the discovery of the long-sought top quark and the measurement of its mass. The top quark's extremely large mass (175 GeV) has stimulated intense discussion on the nature of mass itself and prompted renewed searches for the postulated Higgs boson, the generator of mass. Precision electroweak measurements from both DZero and CDF on the mass of the W boson have, in turn, constrained the mass of the Higgs to surprisingly low values. This gives some hope that the Higgs may be accessible by the increased luminosity and energy of future Tevatron running.



The CDF Detector

During the present shutdown of the Fermilab accelerator facilities, design and construction of detector upgrades are being carried out at MSU. For example, to cope with the expected higher luminosities the MSU DZero group has been charged with the responsibility of redesigning the fast trigger system. The work is being done in our electronics shop supervised by Dan Edmunds with specific responsibility for upgrades to the Level 1 trigger assigned to Professor Maris Abolins and for the Level 2 trigger to Professor Jim Linnemann.

The Tevatron collider is scheduled to recommence running around the end of next year. We anticipate that all members of the MSU high energy group will once again play substantial roles in running the two experiments. Our physics interests will be focused on the properties of the top quark, on electroweak phenomena, on QCD, and on searches for the Higgs particles and any possible new physics beyond the Standard Model. ▯

Alumni News *continued . . .*

junct faculty position at Lawrence Technological University. **Lowell McCann** PhD'98 joined the physics faculty at the University of Wisconsin, River Falls (his alma mater) this fall after completing a year's postdoc at MSU after completion of his degree. **Stephen Tanner** BS'94 completed his PhD in mathematics at the University of Washington. He has begun a postdoctoral position at the University of Minnesota. **Ian Redmount** BS'78 has been awarded tenure and promoted to Associate Professor at Park College of St. Louis University. **Jaeyong Yee** PhD'95 has accepted a teaching position at Eulji University where he will be teaching interdisciplinary physics/medicine. He and **Hyunju Chang** PhD'95 recently announced the birth of their second daughter. **John Mountz** PhD'74 is Professor of Medicine in the Division of Clinical Immunology and Rheumatology, Department of Medicine at the University of Alabama at Birmingham. **James Mountz** PhD'74 likewise has an MD degree and is at the the University of Alabama in Birmingham. **John Ruscigno** MS'77 is with the Oregon Department of Environmental Quality; he has worked on noise control, air quality and is now involved with lobbying. **Michael Miller** BS'99 is in the graduate program in physics at Yale University. **Jerry Johnston** BS'62 MS'65 PhD'67 has been a Program Manager at Optical Coating Laboratory in Santa Rosa, CA since 1982. He has managed the coating of large mirrors such as for the Chandra x-ray telescope that was launched by NASA in July. He is currently managing projects for development and manufacture of passive optical components for fiber optics telecommunications applications.

Let us know about you and we will include your news in the next PA News. Do you want to find a lost classmate? Use our web site to inquire. ▯

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url:  www.pa.msu.edu/alumni.htm
email:  newsletter@pa.msu.edu
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In and Around *continued . . .*

Chemistry Dept. MSU; Dr. Jan Hessler, Argonne National Laboratory; Dr. Diandre Leslie Pelecky, University of Nebraska; Dr. Gregory Kenning, University Of California at Riverside; Dr. Michael Wilson, Tulsa University; Dr. Phillippe Monod, Ecole Normale Superieure, Paris; Dr. Isabelle Krauss, University of Strasbourg, France (whose visit was cancelled at the last moment for family reasons). The speakers were remarkable in keeping within the boundary condition "rooted in Physics." There ensued several lively discussions in which we dare to believe Jerry would have enjoyed participation. ▯

The Sound of Music

In a talk presented at the 2 November 1999 meeting of the Acoustical Society of America in Columbus, OH, William Hartmann described and demonstrated a new method of sound recording and reproduction called "Local Performance Recording/Reproduction (LPR/R)." In his demonstration, he applied the technique to a Mozart string quartet. In a fundamental departure from traditional multichannel recording techniques, Hartmann isolated each instrument on its own two channels of an eight-channel digital recorder using two contact transducers per instrument. He then experimented with different mixes of the two channels and different speaker configurations for each instrument. With speaker radiation patterns similar to the particular violin, viola, or cello, and placements arranged as the musicians originally sat, the result sounds as if a live quartet were playing—the room acoustics were those of the listening environment and not those of the recording environment.

Dr. William Hartmann, center, with a string quartet wired for a new recording technique. From left are Takeshi Abo, first violin; Karel Taulbee, second violin; Jan Wea Yoo, viola; and Mary Williams, cello.

The LPR/R technique requires a minimum of one recorded channel and one transducer in the listening environment for each source in the ensemble. Application to string quartets is a natural since technically it works well, there is a vast and wonderful literature for string quartets, and there are many performers and devoted fans of string quartets. Conventional two-channel distribution of sound, via stereo broadcasting or compact discs or tape, is inadequate for LPR/R. The LPR/R technique depends on new technology (not far off) for multichannel distribution.

This talk was reported in the *New York Times* on November 16 and the article is available at website `nytimes.com` in the technology archive free article section as "A New Dimension in Recorded Music" by James Glanz. The November issue of *Physics Today* includes a related article by Hartmann on the localization of sound by human listeners.

You can learn more about Bill's research at `www.pa.msu.edu/acoustics/`

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